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Research Article

Depressive Symptoms among Patients in Primary Care Centers: Cross-Section Study

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Abstract

Background: Depression is a common mental health condition that often presents with physical or somatic symptoms in primary care settings. The aim of this study is to investigate the prevalence of depressive symptoms among patients presenting with somatic complaints in a primary care setting

Methods: A cross-sectional study was conducted with 106 adult patients presenting to a primary care clinic with somatic complaints. Participants completed self-report measures of depression and somatic symptoms. Depressive symptoms were assessed using a self-report scale based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders (PHQ-9).

Results: The age group 38-47 had the highest proportion of participants, while a smaller proportion of individuals were aged 18-27 years (N = 12, 11.3%). The gender distribution was shown as 45.3% males and 54.7% females. After investigating the prevalence of depression among participants and examining the potential demographic factors that were associated, results showed a significant 65% experienced some level of depression. Marital status emerged as an important predictor of depression. Married individuals were less likely to experience depression compared to those who were single, divorced, or widowed. On the other hand, age, sex, number of children, and income level were not found to be significant predictors of depression.

Conclusions: The prevalence among primary care patients presenting with somatic complaints. Screening for depression and providing integrated care for both mental and physical health concerns are important in this patient population. Further research is needed to develop and test interventions to improve patient outcomes.

Keywords: depression, primary care, somatic symptoms, integrated care.

Introduction

Depression is a major public health concern, affecting an estimated 264 million people globally [1]. In primary care settings, depression is widespread, with prevalence estimates ranging from 5-10% of all patients [2]. One of the hallmark features of depression in primary care is the presentation of physical or somatic symptoms rather than the typical emotional and cognitive symptoms associated with the condition. In a study conducted by Wilson *et al.* (1995), the prevalence and correlates of depressive syndromes were examined among adults visiting an Indian Health Service primary care clinic [3]. The study was cited despite its age because it was one of the first to highlight the relationship between depression assessment in primary care and patient behaviors, and it remains a fundamental reference in modern research. Another relevant study is the Vantaa Primary Care Depression Study conducted by Riihimäki *et al.* (2023). This study aimed to define remission from depression based on health-related quality of life (HRQoL) among primary care patients [4]. Somatic symptoms such as pain, fatigue, gastrointestinal issues, and other physical complaints are common ways that depression manifests in primary care [5]. Patients with depression and somatic symptoms often undergo extensive medical workups, leading to increased healthcare utilization and costs [2]. However, the underlying depression is frequently unrecognized or undertreated in these cases. This study aimed to investigate the prevalence and characteristics of depression among a sample of patients visiting a primary care unit with somatic complaints. Identifying the burden of depression in this population can inform the development of integrated care models to better address both the mental and physical health needs of these patients. To address these challenges, integrated care models have been

implemented, incorporating care managers to support the management of depression within primary care. A study in Sweden evaluated the implementation of care managers and found that while clinicians and directors recognized the benefits of collaborative care, barriers such as high workload and insufficient staffing affected its effectiveness [6]. Facilitators included support from colleagues and leadership, as well as positive attitudes toward collaborative practices. Despite its prevalence, depression often remains underrecognized and undertreated in primary care. Research indicates that a significant proportion of depressed patients are not accurately diagnosed, and many do not receive appropriate treatment. Factors contributing to this include the presentation of somatic symptoms, time constraints during consultations, and limited access to mental health resources [7].

Integrated care models have been developed to address the challenges of managing depression in primary care settings. These models often involve the collaboration of primary care physicians and mental health professionals to provide comprehensive care. Studies have shown that such integrated approaches can lead to improved recognition and treatment of depression, resulting in better patient outcomes. For instance, research indicates that integrating mental health services within primary care can enhance early treatment engagement for patients newly identified with depression [8-9].

Despite these advancements, depression continues to be underrecognized and undertreated in primary care. Factors contributing to this include patients' tendency to present with somatic complaints, time constraints during consultations, and limited mental health training among primary care physicians. A study found that primary care physicians recognized only about half of their depressed patients, highlighting the need for improved diagnostic strategies. Addressing these barriers is crucial for enhancing the detection and management of depression in primary care settings [10]. According to a study by the Arab Barometer (2022), which surveyed over 25,000 individuals across the Middle East and North Africa, the reported prevalence of depression in Iraq and neighboring countries is as follows, around 17% of respondents reported experiencing depression in Iraq, approximately 19% reported symptoms of depression in Jordan, the rate was significantly higher, with 44% reporting symptoms of depression in Lebanon, and the prevalence was lower, at around 14% in Saudi Arabia [11].

The psychological causes of depression are a combination of elements of the environment, mental processes, and biological factors. According to the monoamine theory, depressed symptoms caused by monoamine deficits of serotonin, norepinephrine, and dopamine can explain symptoms of depression. According to the theories produced by neuroscience studies, lowered neurotransmitter levels combined with defective signaling mechanisms produce changed receptor responses that induce depression [12]. According to scientific studies, recorded alterations in brain structure in the prefrontal cortex and amygdala fit the degree and length of depressed symptoms. Utilizing changes in cortisol release patterns, HPA axis failure explains the stress reaction exacerbating depressive symptoms [13]. Psychological factors, combining persistent suffering with past events, define much of the course of depression and its starting point. Cognitive theories on the causes of depression mostly rely on negative ideas and insufficient coping strategies. Studies show that relationships between environmental influences and biological inheritance generate depression risk even in cases when the disorder originates from several influencing factors. Good diagnosis and treatment of depression depend on a whole approach incorporating psychological, social, and biological aspects [14].

The aim of the study is to investigate the prevalence of depression symptoms among patients presenting with somatic complaints in a primary care setting.

Materials and Methods

Patients

The study involved a sample of 106 adult participants recruited from primary care centers. To avoid confounding factors, inclusion criteria might include adults aged 18 and above who are capable of providing informed consent. The study was conducted during the period from 25 May 2024 to 25 July 2024. Inclusion criteria involved adults aged between 18 and 65 years who visited primary healthcare centers and were suspected of having depressive symptoms. Exclusion criteria included patients with chronic diseases, those taking long-term medications that may cause depression, or individuals with a prior diagnosis of psychiatric disorders. Other excluded patients were those with psychiatric diagnosis and on psychiatric medication, patients attended complaining mostly of simple conditions like common cold, gastrointestinal problems and other group visiting the primary care centers for follow up of their chronic medical conditions like diabetes mellitus and hypertension, in addition to group of patients attending for prenatal care and vaccination. The economic status was assessed through a direct question, with responses categorized as poor, average, or good."

Study Design

A cross-sectional study was conducted at the Al-Hur Sector, Karbala Health Directorate, Iraq. Data were collected using a special questionnaire that was distributed to the patients after obtaining their consent to assess the prevalence of depressive symptoms within the selected population at a single point in time. The PHQ-9, a validated self-administered questionnaire, was used to screen for depressive symptoms. This tool aligns with the DSM-IV criteria for major depressive disorder and is widely utilized in primary care settings due to its brevity and reliability. Participants completed self-report measures of depression severity [15]. Demographic and clinical data, including age, gender, socioeconomic status, and chronic medical conditions, were extracted from medical records. Additional data, such as demographic information and medical history, and questionnaires to identify potential correlates of depression.

Ethical approval

The study was conducted following ethical guidelines, ensuring informed consent was obtained from all participants. Confidentiality and the right to withdraw from the study at any time would be emphasized. Ethical approval was obtained in No. 01 in 2024.

Statistical Analysis

Descriptive statistics were used to characterize the sample. Chi-square and t-tests were performed to examine differences between participants with and without depression. Logistic regression was used to identify factors associated with depression.

Results

Demographic and clinical characteristics

The present study examined the demographic characteristics of 106 participants. The majority of participants were in the age group 38-47 years (N = 32, 30.2%), followed by the age group 48-57 (N =30, 28.3%). A smaller proportion of participants were in the age group 18-27 years (N = 12, 11.3%). Regarding marital status, most participants were married (N 80, 75.5%), single (N = 11, 10.4%), and a small percentage were divorced (N = 2, 1.9%) or widowed (N = 13, 12.3%). In terms of gender, the sample was relatively nearly not unbalanced, with 45.3% of participants being male and 54.7% being female. The participants were distributed across various income levels. 18.9% reported having low income, 46.2% had middle income, 31.1% had good income, and a small percentage (3.8%) reported having very good income. Finally, the majority of participants had children (84%). About 62.3% had 1-4 children, while 21.7% had more than 4 children. A smaller proportion (16.0%) did not have children, as shown in Table 1.

Table 1. Number and percentage of participants according to demographic information

Variables	Groups	N(%)
Age Group (Years)	18-27 Years	12(11.3)
	28-37 Years	18(17.0)
	38-47 Years	32(30.2)
	48-57 Years	30(28.3)
	58-67 Years	14(13.2)
Status	Married	80(75.5)
	Single	11(10.4)
	Divorce	2(1.9)
	Widow	13(12.3)
Sex	Male	48(45.3)
	Female	58(54.7)
Income	low	20(18.9)
	Middle	49(46.2)
	Good	33(31.1)
	Very Good	4(3.8)
No. of Child	No Child	17(16.0)
	1-4 Child	66(62.3)
	More than 4 Child	23(21.7)

The results show that about 35% of participants reported no depression, and 45% of participants reported experiencing simple depression, followed by moderate depression (3.0%) and severe depression (8%), and only 3% reported extreme severe depression overall. The prevalence of depression was 65%, as presented in Figure 1.

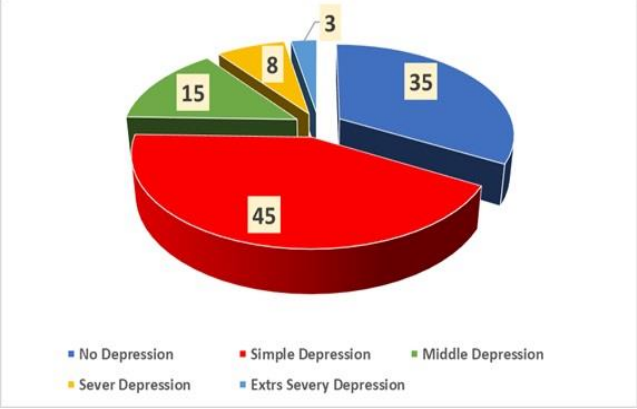

Figure 1. Percentage of depression among participants.

As presented in Table 2, there was no significant association between sex, age group, number of children, and depression level ($p > 0.05$). There was a significant association between marital status and depression level ($p < 0.05$). Married individuals were more likely to report lower levels of depression compared to those who were single, divorced, or widowed.

Income Level

Surprisingly, results also showed no significant association between income level and depression level

($p > 0.05$). On the other hand, there was a significant association between the severity of depression and the reported difficulty it caused in daily life ($p < 0.05$). Participants with higher levels of depression (moderate, severe, or extremely severe) were more likely to report significant difficulties in their lives compared to those with no depression or simple depression.

As shown in Table 3, multiple linear regression analysis was conducted to examine the association between depression and demographic characteristics. Results showed that the strongest predictor of depression was marital status, with a significant positive association ($p =$ 0.001). This suggests that individuals who were divorced or widowed are more likely to experience depression. While none of age, sex, child, and money were found to be significant predictors of depression in this analysis.

Table 2. The association between different variables (sex, age group, stage) with anxiety.

Variable	Groups	Depression					P-value
		No Depression N(%)	**Simple** Depression N(%)	**Middle** Depression N(%)	**Sever** Depression N(%)	Extra Severe Depression N(%)	
Sex	Male	19(54.3%)	17(37.8%)	9(60%)	2(25%)	1(33.3%)	0.065[NS]
	Female	16(45.3%)	28(62.2%)	6(40%)	6(75%)	2(66.7%)	
Age Group (Years)	18-27	4(11.4%)	6(13.3%)	1(6.7%)	1(12.5%)	0(0%)	0.683[NS]
	28-37	10(28.6%)	4(9%)	1(6.7%)	3(37.5%)	0(0%)	
	38-47	10(28.6%)	17(37.8%)	4(26.6%)	1(12.5%)	0(0%)	
	48-57	9(25.7%)	11(24.4%)	6(40%)	2(25%)	2(66.7%)	
	58-67	2(5.7%)	7(15.5%)	3(20%)	1(12.5%)	1(33.3%)	
Status	Married	29(82.86%)	35(77.7%)	10(66.6%)	5(62.5%)	1(33.3%)	0.001**[S]**
	Single	6(17.14%)	4(9%)	1(6.7%)	0(0%)	0(0%)	
	Divorce	0(0%)	0(0%)	1(6.7%)	1(12.5%)	0(0%)	
	Widow	0(0%)	6(13.3%)	3(20%)	2(25%)	2(66.7%)	
No. of child	No Child	7(20%)	7(15.5%)	2(13.3%)	1(12.5%)	0(%)	0.123[NS]
	1-4 Child	24(68.6%)	28(62.2%)	7(46.7%)	4(50%)	3(%)	
	More than 4 Child	4(11.4%)	10(22.2%)	6(40%)	3(37.5%)	0(%)	
Income	Bad	5(14.3%)	9(20%)	2(13.3%)	2(25%)	1(%)	0.542[NS]
	Middle	15(42.9%)	22(48.9%)	8(%)	3(37.5%)	1(%)	
	Good	14(40%)	12(26.7%)	4(%)	3(37.5%)	0(%)	
	Very Good	1(2.8%)	2(4.4%)	0(%)	0(0%)	1(%)	
Effect of anxiety on their lives	Difficulty	26(74.3%)	9(20%)	1(6.7%)	0(0%)	0(%)	0.001**[S]**
	Extremely difficult	9(25.7%)	31(68.9%)	10(66.7%)	2(25%)	2(%)	
	Very difficult	0(0%)	5(11.1%)	4(26.6%)	3(37.5%)	1(%)	
	No difficulty	0(0%)	0(0%)	0(0%)	3(37.5%)	0(0%)	

Chi-Square presented as N (%), $p<0.05$ considered significantly different, [S]: Significant, [NS]: Non significant

Table 3. Multiple linear regression for the association of depression and demographic characteristics

Groups		**Depression**		
	B	**S.E**	**t**	**P value**
Age	0.009	0.047	0.188	0.851[NS]
Sex	1.156	0.871	1.328	0.187 [NS]
Status	1.55	0.458	3.385	0.001 [S]
Child	0.491	0.305	1.609	0.111 [NS]
Money	-0.591	0.547	-1.079	0.283 [NS]

Chi-Square presented as N (%), $p<0.05$ considered significantly different, [S]: Significant, [NS]: Non significant

Discussion

Although previous studies in Karbala in Iraq, such as one involving 300 healthcare workers, have shown a high prevalence of depression (up to 85%) using the PHQ-9 tool [16]. There is limited data on the prevalence of depressive symptoms among the general population attending primary health care centers. This highlights the importance of assessing depression in broader patient populations, not just healthcare professionals, to better inform mental health strategies at the community level." The findings revealed an alarmingly high prevalence of depression at 85%. Specifically, 36.3% of participants experienced mild depression, 31% moderate, and 17.7% severe. Notably, female healthcare workers exhibited a higher prevalence rate (87.2%) compared to their male counterparts (81.8%). These results underscore the critical need for mental health support and interventions tailored to healthcare professionals in the region [16].

The results of this study indicate a significant prevalence of depression among the participants, with 65% reporting experiencing some level of depression. This is a concerning finding, as depression can have a substantial negative impact on individuals' mental health and well-being. The high prevalence of depression suggests a significant mental health burden within the study population. Previous studies have shown that the prevalence estimates of this disorder were varied [17]. There is a certain correlation between the occurrence of Major Depressive Disorder (MDD) and social development in this study. A survey reported that with the development of the economy and increased life pressure, MDD has begun to emerge at a younger age, and the incidence of MDD in women is approximately twice that in men [18]. Specifically, women are more likely to develop depressive symptoms when they encounter social emergencies or are under significant stress [19]. The clinical symptoms of depression include a depressed mood, loss of interest, changes in weight or appetite, and increased likelihood of committing suicide [20]. These symptoms are also listed as the criteria for depression in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) [21]. DSM-IV was chosen as the main reference in this study because it is clearer in clinical application according to the recommendations of many studies, and DSM-5 was mentioned only for comparison.

Pharmacological ablation of astrocytes in the medial prefrontal cortex (mPFC) causes depressive-like symptoms in experimental animals [22], and postmortem studies of patients with depression have shown reduced densities of glial cells in the prefrontal cortex (PFC), hippocampus, and amygdala [23]. In addition, glial fibrillary acidic protein (GFAP), one of the markers of astrocytes, is expressed at various levels [24], and the levels of connexins [25], glutamine synthase (GS), glutamate transporter-1 (GLT-1) [26], and aquaporin-4 (AQP4) [27] are reduced in patients with depression.

The finding that marital status is significantly associated with depression levels, with married individuals reporting lower levels compared to those who are single, divorced, or widowed, aligns with previous research in this area. Married individuals often have a strong social support network within their families, which can provide emotional support and reduce feelings of loneliness and isolation. This emotional support can be a protective factor against depression.

Married couples often share experiences and challenges, which can foster a sense of connection and shared purpose. This can contribute to a greater sense of well-being and reduce feelings of stress and anxiety [28]. Also, Married individuals often have shared goals and aspirations, which can provide a sense of direction and motivation. This can help to reduce feelings of hopelessness and despair, which are common symptoms of depression. Furthermore, in many cases, married individuals have greater financial stability than single individuals, which can reduce stress and anxiety related to financial concerns [29].

Conclusions

Some people with depression do not say they feel sad, but instead complain of physical problems like pain, tiredness, or stomach issues, which are called somatic symptoms. These symptoms are important because they can be the only sign of depression, especially in primary care. People with somatic complaints often visit the doctor more and go through many tests, but the real cause of depression is sometimes missed. When they receive proper treatment for depression, their physical symptoms often improve, which shows that depression was affecting their body as well as their mind.

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